

**Dual Line CAN Bus Protector****DESCRIPTION**

The NUP2105L has been designed to protect the CAN transceiver in high-speed and fault tolerant networks from ESD and other harmful transient voltage events. This device provides bidirectional protection for each data line with a single compact SOT-23 package, giving the system designer a low cost option for improving system reliability and meeting stringent EMI requirements.

**FEATURES**

- ✧ IEC61000-4-2 (ESD)  $\pm 15\text{kV}$  (air),  $\pm 8\text{kV}$  (contact)
- ✧ IEC61000-4-4 (EFT) 40A (5/50ns)
- ✧ IEC61000-4-5 (Lighting) 8.0A (8/20 $\mu\text{s}$ )
- ✧ 350 Watts Peak Pulse Power per (tp=8/20 $\mu\text{s}$ )
- ✧ Working voltages : 24V
- ✧ Low clamping voltage
- ✧ Low leakage current

**MACHANICAL DATA**

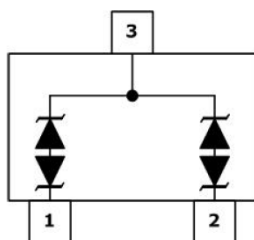
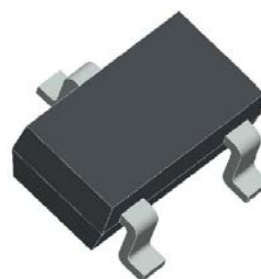
- ✧ SOT-23 package
- ✧ Flammability Rating: UL 94V-0
- ✧ Packaging: Tape and Reel
- ✧ High temperature soldering guaranteed: 260°C/10s
- ✧ Reel size: 7 inch

**ORDERING INFORMATION**

- ✧ Device: NUP2105LTG
- ✧ Package: SOT-23
- ✧ Material: Halogen free
- ✧ Packing: Tape & Reel
- ✧ Quantity per reel: 3,000pcs

**APPLICATIONS**

- ✧ Industrial Control Networks
  - Smart Distribution Systems
- ✧ Automotive Networks
  - Low and High-Speed CAN
  - Fault Tolerant CAN

**PIN CONFIGURATION****PACKAGE OUTLINE****SOT-23**

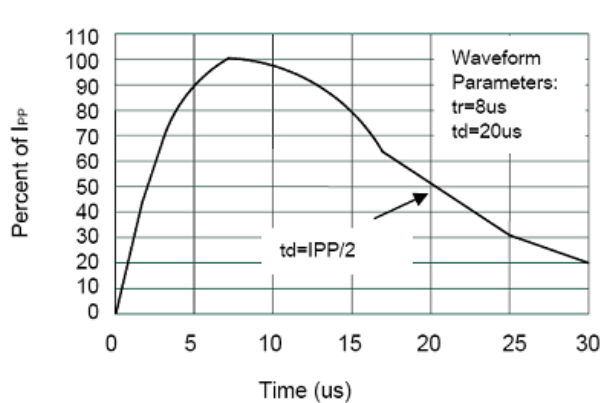
## ABSOLUTE MAXIMUM RATING

| Symbol    | Parameter                       | Value         | Units        |
|-----------|---------------------------------|---------------|--------------|
| $V_{ESD}$ | ESD per IEC 61000-4-2 (Air)     | $\pm 30$      | kV           |
|           | ESD per IEC 61000-4-2 (Contact) | $\pm 30$      |              |
| $P_{PP}$  | Peak Pulse Power (8/20 $\mu$ s) | 350           | W            |
| $T_{OPT}$ | Operating Temperature           | -55/+150      | $^{\circ}$ C |
| $T_{STG}$ | Storage Temperature             | -55/+150      | $^{\circ}$ C |
| $T_L$     | Lead Soldering Temperature      | 260 (10 sec.) | $^{\circ}$ C |

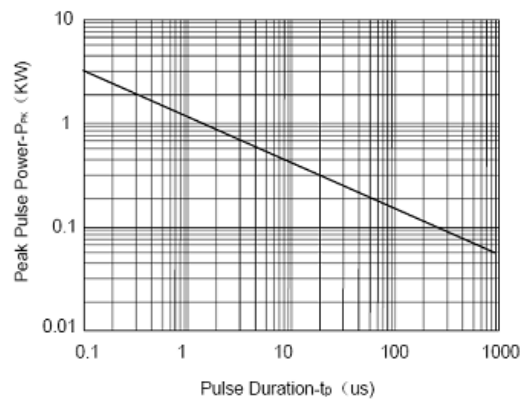
## ELECTRICAL CHARACTERISTICS ( $T_{amb}=25^{\circ}$ C)

| Symbol    | Parameter                 | Test Condition                                       | Min  | Typ | Max | Units |
|-----------|---------------------------|------------------------------------------------------|------|-----|-----|-------|
| $V_{RWM}$ | Reverse Working Voltage   | Pin 1,2 to Pin3                                      |      |     | 24  | V     |
| $V_{BR}$  | Reverse Breakdown Voltage | $I_T = 1mA$<br>Pin 1,2 to Pin3                       | 26.2 |     | 32  | V     |
| $I_R$     | Reverse Leakage Current   | $V_{RWM} = 24V$<br>Pin 1,2 to Pin3                   |      | 15  | 100 | nA    |
| $V_{C1}$  | Clamping Voltage 1        | $I_{PP} = 1A$ , $t_p = 8/20\mu s$<br>Pin 1,2 to Pin3 |      |     | 36  | V     |
| $V_{C2}$  | Clamping Voltage 2        | $I_{PP} = 5A$ , $t_p = 8/20\mu s$<br>Pin 1,2 to Pin3 |      |     | 46  | V     |
| $C_J$     | Junction Capacitance      | $V_R = 0V$ , $f = 1MHz$<br>Pin 1,2 to Pin3           |      | 25  | 30  | pF    |

## ELECTRICAL CHARACTERISTICS CURVE

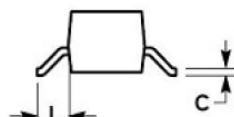
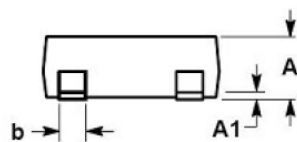
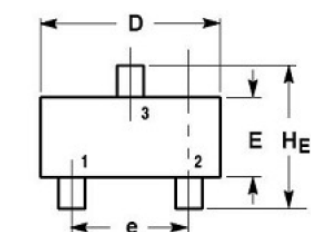


Pulse Waveform



Non-Repetitive Peak Pulse Power vs. Pulse Time

## SOT-23 PACKAGE OUTLINE DIMENSIONS



| DIM | MILLIMETERS |      |      | INCHES |       |       |
|-----|-------------|------|------|--------|-------|-------|
|     | MIN         | NOM  | MAX  | MIN    | NOM   | MAX   |
| A   | 0.89        | 1.00 | 1.11 | 0.035  | 0.040 | 0.044 |
| A1  | 0.01        | 0.06 | 0.10 | 0.001  | 0.002 | 0.004 |
| b   | 0.37        | 0.44 | 0.50 | 0.015  | 0.018 | 0.020 |
| c   | 0.09        | 0.13 | 0.18 | 0.003  | 0.005 | 0.007 |
| D   | 2.80        | 2.90 | 3.04 | 0.110  | 0.114 | 0.120 |
| E   | 1.20        | 1.30 | 1.40 | 0.047  | 0.051 | 0.055 |
| e   | 1.78        | 1.90 | 2.04 | 0.070  | 0.075 | 0.081 |
| L   | 0.35        | 0.54 | 0.69 | 0.014  | 0.021 | 0.029 |
| HE  | 2.10        | 2.40 | 2.64 | 0.083  | 0.094 | 0.104 |